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Docket No.: ST00028USU (130-US-U1)

REMARKS

Claims 1-8 are pending in this application. Applicants are traversing the rejection of claims 1-4, while claims 5-8 are in condition for allowance. Applicants believe that no new matter has been added by this response.

Response to 35 U.S.C. §103 Rejection

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Examiner rejected claims 1-4 under 35 U.S.C. 103(a) as being unpatentable over Sturza et al. (US 4,862,178), hereafter the '178 patent. Applicants point out that a 35 U.S.C 103(a) rejection is based on the claims being obvious over the '178 patent in view of another piece of art or in view of the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Applicants are under the understanding that the Examiner intended the second reference of the 35 U.S.C. 103(a) rejections to be a person having ordinary skill in the art at the time the invention was made. The Examiner found that the '178 patent did "not expressly teach the claimed step of outputting a state of magnitude of the IF signal when the IF signal has zero

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crossing.” The Examiner then went on to make the statement that because the ‘178 patent “teaches the state of the counter 30, when stopped by the arrival of positive zero crossing of the hard limited IF signal, one of ordinary skill in the art at the time of the invention would have been motivated to modify Sturza et al. teachings to output the state of the magnitude of the IF signal at the arrival of positive zero crossing of the hard limited IF signal.”

Not all claim limitation taught or suggested by cited art

The prior art reference of the ‘178 patent in view of a person having ordinary skill in the art to which said subject matter pertains, does not teach or suggest all of Applicants’ claim limitations. The Examiner stated in the Office Action that the ‘178 patent does not expressly teach the claimed step of outputting a state of magnitude of the IF signal when the IF signal has zero crossing. Thus, there is no suggestion of outputting a state of magnitude of the IF signal in the ‘178 patent. The Examiner goes on to explain that the ‘178 patent “teaches the state of the counter 30, when stopped by the arrival of positive zero crossing of the hard limited IF signal, one of ordinary skill in the art at the time of the invention would have been motivated to modify Sturza et al. teachings to output the state of the magnitude of the IF signal at the arrival of positive zero crossing of the hard limited IF signal.”

But, the ‘178 patent teaches using “a phase sampling interval that is an integer multiple of T.... As such, the five-bit state of the counter 30, when stopped by the arrival of a positive-going zero crossing of the hardlimited IF signal is [formula]... The doubling of the value or count that is generated is accomplished by entering only the four LSB’s of the count generated within the counter 30 during the (“START” to “STOP”) interval into the latch 38 and “discarding” the value

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of the most significant bit. As a result, the following value is entered into the latch 38 during each phase sampling period:

$$(2\omega_d nT + 2\theta + 2\phi_n) \bmod 2\pi.$$

The above expression represents the value of the measured phase of the IF signal and is independent of signal coding (c.f. equations 1 and 2)", (Column 4, line 55-Column 5, line 15).

The '178 patent is teaching using five bits for the state of a counter that is then doubled and further processed using only four LSB's of the count to determine the value of the measured phase of the IF signal that is independent of signal coding. Nowhere does the '178 patent teach nor does the '178 patent suggest outputting a state of a magnitude of the IF signal when the IF signal has a zero crossing. The '178 patent teaches and suggest deriving the value of the measured phase of the IF signal.

But, Applicants are claiming outputting a state of magnitude, not just determining the measured phase of the IF signal. Thus, there is no suggestion to output the state of magnitude in the '178 patent.

Therefore, claims 1-4 are in condition for allowance.

Must be some suggestion or motivation to combine

A prima facie case of obviousness requires that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings of the '178 patent. The combination of the '178 patent and knowledge generally available fails to describe all the elements claimed by the Applicants, thus there can be no motivation to combine because at least one element would still be missing. Any such objective reason can only be found in the

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teaching of the application in suit. **Even if the mere fact that the prior art could be modified as proposed by the Examiner, which Applicants do not admit could be done, it is not sufficient to establish a prima facie case of obviousness, In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).**

Therefore, the cited art cannot be combined because all the elements of Applicants' amended claims 1-4 are not found in the cited references.

There must be a reasonable expectation of success

Prima facie obviousness requires that there must be a reasonable expectation of success when prior art is modified or combined. There is no reasonable expectation of success in achieving the invention claimed when the '178 patent is modified with knowledge from a person skilled in the art.

As discussed above, the combination of cited art does not contain all the elements of Applicants' claims 1-4. Unless all the elements are taught by the references, there can be no success in combining the cited references. Therefore, there is no reasonable expectation of success if '178 patent is combined with the knowledge of one skilled in the art.

In summary, the combination of the above references does not meet the three basic criteria to establish a prima facie case of obviousness and Applicants respectfully submit that claims 1-4 are now in condition for allowance.

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Allowable Subject Matter

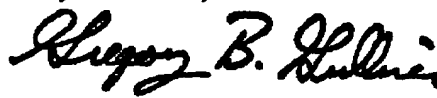
The Examiner indicated that claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have rewritten claim 5 in independent form including all of the limitations of the base claim.

Thus, claims 5-7 as now presented are in condition for allowance.

Conclusion

In view of the foregoing discussion, Applicants respectfully submit that claims 1-8 as presented and in view of the remarks above are in a condition for allowance, for which action is earnestly solicited.

Respectfully submitted,

By 

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